

A Review of the Immigration of *Hyles gallii* Rott. during 1973 with Special Reference to Records for 1972 and 1974

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I have thought it of interest to make a survey and analysis of the great invasion of the Bedstraw Hawkmoth (*Hyles gallii* Rott.), which seems to have spread right across the British Isles during the fine summer of 1973, together with a correlation of records of this insect during the preceding year as well as its aftermath in 1974. For nearly 200 years there have been fairly regular records kept of the presence in these Islands of this Hawkmoth, but there have probably been only three other occasions during that period when its immigration reached the proportions of that of 1973. These were the great "Gallii" years of 1870, 1888 and 1955. In this connection it might be of importance to trace the history of the Bedstraw Hawk in Great Britain leading up to the year under review.

As far back as 1812, Haworth mentions the finding of larvae in Devonshire, but not much more is heard of this species until 1834 when about a dozen imagines were taken near Great Yarmouth and larvae were found on the Norfolk dunes. Fortunately from 1850 till 1955 Dr. C. B. Williams has put on record in his "Migration of Insects" the numbers of 29 migrant species for that period of 106 years including, of course, *H. gallii*. Larvae were found in both 1855 and 1859, but it was not until 1870 that there was a great invasion with at least 70 imagines recorded and many hundreds of larvae found in the late summer of that year. However, by far the most celebrated "gallii" year was 1888 when, though 65 Bedstraw hawks were noted, the larvae that summer were said to be numbered almost by the thousand especially on the Lancashire and east coasts. But some of the intervening periods hardly saw anything of this moth. In fact the largest number seen in any year between 1889 and 1955 was seven in 1935 and there were many years earlier this century without a single *gallii* being recorded. Larvae, however, were found in the Camberley area in 1933. The next big year was 1955 when some 50 moths were noted over most of the country and many good series bred from them. For a few years after this until 1958 larvae were found in a particular locality in north Norfolk, thus indicating the species was able to survive our inclement climate for at least three seasons.

For the next 15 years there were not many seasons when *H. gallii* did not appear on our shores, though only very sporadically with an occasional record. However, during this period it reached Shetland and larvae were found in Ireland in 1961. It was in 1962 that Mr. J. Messenger and I had the remarkable experience of taking *H. gallii* and *Celerio livornica* Esp. together on the same night, June 6th, in Co. Kerry.

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According to Mr. B. Lempke of Amsterdam and other authors, the Bedstraw Hawk appeared in great abundance in the larval state in Holland during the later 1960's so that perhaps it is not surprising that we should have had this great visitation in 1973, though it is only quite hypothetical that their origin was just across the North Sea. As will be discussed later, the source of the immigration might well have been in Eastern Russia.

As precursor there was quite a significant immigration in the summer of 1972, when, mainly during July, imagines of *H. gallii* were recorded from Suffolk and Kent with at least one capture as far west as Dingle in Co. Kerry. In this comparatively small incursion with apparently less than 20 records it is of importance to note that there were apparently no captures in the northern areas of these islands, though larvae were found in mid-September near Stoke-on-Trent in Staffs., also in Flintshire, as well as on the Lancashire coast near Silverdale, which is very different from the vast wave of this species that swept northwards during 1973 invasion. But judging from the dates and locations of the 1972 migration as set out below it is possible that one wave came in from the east coast through East Anglia to the edge of the Midlands with another wave perhaps arriving from a more southerly direction and travelling further north as far as Lancashire.

The chief records for 1972 are set out in chronological order as follows with their respective references and names of captors or recorders.

July 14th. Walberswick, Suffolk, two ♂♂ taken at light (Wild, *Ent. Rec.*, **84**: 225).

July 18th. Alfold, Lincs., one ♂ taken by G. Wright (Pilcher, *Ent. Rec.*, **84**: 250).

July 17th. Southminster, Essex, two (A. J. Dewick).

July 18th. Near Scunthorpe, Lincs., one ♀, at honeysuckle (Pilcher, *Ent. Rec.*, **84**: 250).

July 19th. Beeley Moor, Derbyshire, one (B. G. Withers).

July 20th. Wrotham, Kent, one in a light trap by Andrew Ruck (Chalmers-Hunt, *Ent. Rec.*, **84**: 286).

July 20th. Ledbury, Hereford, two ♂♂ taken in a light trap (Harper, *Ent. Rec.*, **85**: 68).

July 21st. Dingle, Co. Kerry, one ♀ in a light trap (Huggins, *Ent. Rec.*, **85**: 65).

July 21st. Witherslack, one (K. Bevan).

July 26th. Dungeness, one infertile ♀ (I. A. Watkinson and S. Whitebread).

July 27th. Near Sevenoaks, Kent, one ♀ from which 100 fertile ova were obtained (Dyer, *Ent. Rec.*, **84**: 290).

July (latter half). Eastbourne, one (S. Pooles).

July (latter half). Beer, South Devon (Woolatt).

August 27th. Little Cawthorpe, Louth, Lincs., one (G. Wright).

Larvae of *Hyles gallii* recorded during 1972 in chronological order.

August (no date). Lincoln, one (M. Townsend).

September 9th. Shotton, Flintshire, one (I. Williams).

September 18th. Stoke-on-Trent, one (R. G. Warren).

September 19th. Stoke-on-Trent, one (R. G. Warren).

September 20th. Leighton Moss, Silverdale, Lancs., two (J. Briggs).

September (late). Near Blackpool, Lancs., six (White).

No date. Todmorden, Lancs., one (P. A. Arak).

Coming now to the great incursion of *gallii* during 1973, I would like to say at the outset how extremely grateful I am to many collectors and others who answered my appeal for records, many of whom sent most detailed accounts of taking the imagines or finding the larvae. Above all I must express my great indebtedness to Mr. R. A. French, of Rothamsted Experimental Station, for his help in correlating all the reported insects and larvae and for most kindly preparing and sending the map showing where these occurred in the British Isles in that remarkable year.

The first sign of the invasion came from North Norfolk where Mr. Patrick Kearney was amazed to find a *gallii* in his m.v. trap on June 23rd at his home at Cley-next-Sea and according to Mr. French the last specimen was taken at Gibraltar Point in Lincs., on August 15th. In the intervening period Mr. French knows of at least 65 imagines recorded over most of England and Scotland up to the Orkneys. As will be seen from the map, and as might be expected, the south coast seems to have recorded the greatest impact of insects. Though there were quite a lot of records from the east coast right up to Aberdeen with less numbers of moths noted on the west coast, this region however during September seemed to provide the bulk of the larvae in rather a similar pattern to the 1888 invasion, though in appreciably less numbers. In fact Mr. French estimates the total number of larvae noted not to exceed 200 compared with well over a thousand in 1888. However, several cities, as will be observed from the tables later, harboured the larvae, notably Edinburgh where Mr. Pelham-Clinton found in mid-September seven feeding on fireweed (*Epilobium angustifolium*), their chief pabulum. Several larvae were also recorded from the centre of Lincoln. The main wave of insects seem to have reached the south coast about the third week in July. No less than six examples were taken at or near Swanage, Dorset, at this period in the space of three nights. But by this date two moths had already been noted in Orkney which seems to point distinctly to an almost simultaneous northward movement. Although the insect reached the west coast of Scotland, there does not seem to have been any record from Ireland during 1973. The ensuing list of the principal records of imagines and larvae of *H. gallii*, together with the accompanying map kindly provided by Mr. French, gives some idea of the large area of the British Isles covered by this celebrated migrant Hawkmoth during 1973.

PLATE IX

C. galii 1973



Table A

Records of the Imagines of *Hyles gallii* in 1973 listed geographically by Counties from South to North together with captors, recorders and literature references where published.

- KENT. Sandwich, one ♂, one ♀, taken August 2nd and 3rd (Denis O'Keeffe). Sandwich, one ♀, taken August 10th (Evans, *Ent. Rec.*, **85**: 298).
- SUSSEX. Peacehaven, ♂, July 27th (Pratt, *Ent. Rec.*, **85**: 247). Ferring-on-Sea, ♂, August 11th (Freed, *Ent. Gaz.*, **24**: 297).
- HAMPSHIRE. Fareham, ♂, August 1st (C. Luckens). Minstead, ♂ at light trap, August 1st (Siggs, *Ent. Rec.*, **85**: 225). Boldre, ♀ at light, August 1st (Middleton, *Ent. Rec.*, **85**: 216).
- SURREY. Virginia Water, ♂ at light, July 23rd (P. J. Baker).
- DORSET. Swanage, ♂ taken at dusk, July 28th, and another 29th. Herston, two ♀♀ at light July 29th. Durlston Head, ♂ at dusk, August 1st, and ♀, August 1st/2nd (Brian Elliott and Bernard Skinner).
- DEVON. Exeter, ♀, July 28th (R. A. Plumbley). Axminster, ♀, July 29th/30th (P. Renshaw). Near Berry Head, Brixham, ♂, July 30th/31st (J. W. Phillips).
- CORNWALL. Penzance, ♂, July 23rd (Smith, *Ent. Rec.*, **85**: 269). St. Mawes, ♂, July 23rd (F. Stanley Smith). Falmouth, ♀, August 1st/2nd (D. C. Lees).
- HERTFORDSHIRE. Gaddesden Row, ♂, July 8th (W. F. Badcock).
- ESSEX. Southminster, ♂, July 27th, two ♀♀, August 2nd (A. J. Dewick).
- OXFORDSHIRE. Chipping Norton, ♂, July 30th (Hugo, *Ent. Rec.*, **86**: 25).
- GLOUCESTERSHIRE. Oakridge, ♂, August 2nd (R. P. Demuth).
- MONMOUTH. Usk, ♀, July 31st (G. A. N. Horton).
- NORFOLK. Cley-next-Sea, ♂, June (Patrick Kearney). *Earliest record*.
- LINCOLNSHIRE. Near Boston, ♀, July 22nd (B. Redman). Sleaford, ♂, July 23rd (J. R. Harnett). Gibraltar Point, ♀, August 15th/16th (Pilcher, *Ent. Rec.*, **86**: 94).
- WORCESTERSHIRE. Evesham, worn ♀, July 14th (James, *Ent. Rec.*, **85**: 247).
- N. WALES. Glan Conway, ♂, July 28th (Michaelis, *Ent. Rec.*, **85**: 227).
- STAFFORDSHIRE. Tettenhall, Wolverhampton, ♀, July 30th (W. Long).
- LANCASHIRE. Near Cleverleys, Blackpool, ♂, no date (A. Watson). Thornton, near Fleetwood, ♀, July 29th (J. Thomson).
- YORKSHIRE. Harewood House, near Leeds, ♀, taken July 17th (P. Brown). Emley, ♀, August 2nd, taken by P. Gunson (Gill, *Ent. Rec.*, **85**: 244).

- WESTMORLAND. Kendal, ♂, taken late July (N. L. Birkett).
Beetham, Milnthorpe, ♂ and ♀, July 21st; ♀, July 23rd
(Briggs, *Ent. Rec.*, **85**: 247).
DURHAM. Stanley, ♂, taken July 23rd by J. Henderson (Long,
Ent. Rec., **85**: 245). Peterlee, ♀, July 26th (W. Monck).
NORTHUMBERLAND. High Heaton, one, July 18th. Near
Walker Gate, Newcastle-upon-Tyne, one, July 19th. Plessey
Woods, one seen by two lepidopterists, July 23rd, as it
was feeding at Rose-bay Willow-herb (*per* T. C. Dunn and
A. G. Long, *Ent. Rec.*, **85**: 245).

Scotland

- LANARK. Gartcosh, near Glasgow, one taken, July 16th (C. E.
Palmer).
ARGYLL. Lock Eck, ♂, July 16th, taken by A. Harding (Tom-
linson, *Ent. Rec.*, **85**: 22). Sanna Bay, two ♂♂ disturbed,
July 31st (M. G. Morris).
PERTSHIRE. Pool of Muckhart, ♂, taken July 17th/18th,
♂, taken August 8th (D. M. Bryant).
RENFREW. Kilmacalm, one taken, August 4th (A. M. Mac-
laurin).
ANGUS. Barnhill, Broughty Ferry, ♂, July 17th (J. Wardrope).
KINCARDINE. St. Cyrus National Nature Reserve, one, July
26th (J. Forster).
MORAY. Hopeman, one, August 12th (Loe, *Ent. Gaz.*, **24**:
306).
ORKNEY. Three, including one ♂ and one ♀, in early July at
Quoyberstane, near Kirkwall (Sydney Gauld).
Also, a ♂ recorded at sea in the north Atlantic at 56 16'N. and
15 42'W. on July 15th (L. B. Philpottt).

Table B

Records of the Larvae of *Hyles gallii* taken in the late summer of 1973 and recorded by Counties from south to north.

- HAMPSHIRE. Rhinefields Enclosure, New Forest, two small
larvae at his house in early August (G. J. Nixon).
LINCOLNSHIRE. Just over 50 larvae in the vicinity of Gibralt-
ar Point in September, and seven more in the City of
Lincoln (Pilcher, *Ent. Rec.*, **86**: 94).
NORTHAMPTONSHIRE. One larva found and two others
destroyed in Mount Parks Road, Northampton, September
13th (J. Payne of Wellingborough).
ESSEX. Stanway, one in third week of July (T. C. Hitchman).
STAFFORDSHIRE. Glascote, near Tamworth, eight in August;
and a further five in the Hanley district also at this period
(Warren, *Ent. Gaz.*, **25**: 12).
WALES. Pembroke Docks, one in September (Greenway). Aber-
dovey Golf Course, four, August 24th (D. R. J. Haigh).
Near Morfa, Harlech, one in August (J. E. Bebington).
YORKSHIRE. Little Keston, near Bradford, three on *Epilo-
bium*, September 12th/18th (? recorder). Wombwell, near

Barnsley, 40, September 9th/10th; Near Selby, six, September 1st/8th (Gill, *Ent. Rec.*, **85**: 271). Skidby, Cottingham, five, August 19th (I. Blackburn). Little Horton, near Bradford, one, September 5th (P. Hoy).

LEICESTERSHIRE. Leicester, one, September 12th (Miss J. E. Dawson).

DERBYSHIRE. Derby, one, September 7th (Foster).

LANCASHIRE. Sandscale Warren, near Barrow-in-Furness, 16, September 5th, and eight September 10th (Briggs, *Ent. Rec.*, **85**: 272). Between Cleverleys and Fleetwood, one September 9th (A. Watson). Near Oldham, three, including two on September 23rd. Near Chadderton, two, September 23rd (L. Kidd). Hoghton, near Preston, one, September (J. Whiteside). Near Lancaster, one, September, taken by a schoolboy (W. A. Watson). Fleetwood, one, September (J. Thompson).

WESTMORLAND. Kendal, one, September 12th (R. Harding).

DURHAM. Shildon, one, September 12th (G. Donald). Esh Winning, one, October 11th (D. Jude). Durham, one, September 28th (S. Silverside).

NORTHUMBERLAND. Blyth, one, September 14th (J. Bradley).

Scotland

SELKIRKSHIRE. Selkirk, one, October 17th, found by a schoolboy. ? recorder (A. Buckham).

MIDLOTHIAN. Seven larvae found in the centre of Edinburgh, September 13th/25th (E. C. Pelham-Clinton).

ANGUS. East End, Dundee, two, August 2nd (J. Wardrope).

PERTSHIRE. Errol, one, October 2nd (S. Gordon).

To sum up for 1973, Mr. R. A. French finds his total records for that year are of 65 imagines compared with 70 in 1870, but only 193 larvae which is far below the huge total of larvae in 1888.

It might have been thought that following the great incursion of the Bedstraw Hawk in 1973, there would have been a fair number of records for 1974. But this was not to be and apparently only seven of this species were noted as follows:

Records of the Imagines of *Hyles gallii* in 1974 arranged chronologically.

June 11th/12th. South Hiendley, near Barnsley, Yorkshire, one (F. Snookes).

June 13th. Batheaston, near Bath, ♂, taken at dusk in the recorder's garden (Moore, *Ent. Rec.*, **86**: 221).

June 22nd. Scunthorpe, Lincs., two ♂♂, taken in a garden (Duddington, *Ent. Gaz.*, **25**: 304).

July 29th. Fair Isle, ♂ taken (B. Spence).

August 3rd. Quendale sand dunes, near Sumburgh Head, on the southern most end of the Shetland mainland, ♂ taken (Bernard Skinner).

August 16th. Baltasound, Unst, the most northerly island of Shetland, a fertile ♀ at light trap (Bernard Skinner).